Integrating the Healthcare Enterprise

IHE IT Infrastructure (ITI) Technical Framework Supplement 2009-2010

Document-based Referral Request (DRR)

Trial Implementation Supplement

August 10, 2009

Contents

Foreword

Integrating the Healthcare Enterprise (IHE) is an initiative designed to stimulate the integration of the information systems that support modern healthcare institutions. Its fundamental objective is to ensure that in the care of patients all required information for medical decisions is both correct and available to healthcare professionals. The IHE initiative is both a process and a forum for encouraging integration efforts. It defines a technical framework for the implementation of established messaging standards to achieve specific clinical goals. It includes a rigorous testing process for the implementation of this framework. And it organizes educational sessions and exhibits at major meetings of medical professionals to demonstrate the benefits of this framework and encourage its adoption by industry and users. The approach employed in the IHE initiative is not to define new integration standards, but rather to support The use of existing standards, HL7, DICOM, IETF, and others, as appropriate in their respective domains in an integrated manner, defining configuration choices when necessary. IHE maintain formal relationships with several standards bodies including HL7, DICOM and refers recommendations to them when clarifications or extensions to existing standards are necessary.

This initiative has numerous sponsors and supporting organizations in different medical specialty domains and geographical regions. In North America the primary sponsors are the Healthcare Information and Management Systems Society (HIMSS) and the Radiological Society of North America (RSNA). IHE Canada has also been formed. IHE Europe (IHE-EUR) is supported by a large coalition of organizations including the European Association of Radiology (EAR) and European Congress of Radiologists (ECR), the Coordination Committee of the Radiological and Electromedical Industries (COCIR), Deutsche Röntgengesellschaft (DRG), the EuroPACS Association, Groupement pour la Modernisation du Système d'Information Hospitalier (GMSIH), Société Francaise de Radiologie (SFR), Società Italiana di Radiologia Medica (SIRM), the European Institute for health Records (EuroRec), and the European Society of Cardiology (ESC). In Japan IHE-J is sponsored by the Ministry of Economy, Trade, and Industry (METI); the Ministry of Health, Labor, and Welfare; and MEDIS-DC; cooperating organizations include the Japan Industries Association of Radiological Systems (JIRA), the Japan Association of Healthcare Information Systems Industry (JAHIS), Japan Radiological Society (JRS), Japan Society of Radiological Technology (JSRT), and the Japan Association of Medical Informatics (JAMI). Other organizations representing healthcare professionals are invited to join in the expansion of the IHE process across disciplinary and geographic boundaries.

The IHE Technical Frameworks for the various domains (IT Infrastructure, Cardiology, Laboratory, Radiology, etc.) defines specific implementations of established standards to achieve integration goals that promote appropriate sharing of medical information to support optimal patient care. It is expanded annually, after a period of public review, and maintained regularly through the identification and correction of errata. The current version for these Technical Frameworks may be found at www.ihe.net/Technical_Framework.

The IHE Technical Framework identifies a subset of the functional components of the healthcare enterprise, called IHE Actors, and specifies their interactions in terms of a set of coordinated,

standards-based transactions. It describes this body of transactions in progressively greater depth. The volume I provides a high-level view of IHE functionality, showing the transactions organized into functional units called Integration Profiles that highlight their capacity to address specific clinical needs. The subsequent volumes provide detailed technical descriptions of each IHE transaction.

This IHE IT Infrastructure Technical Framework Supplement is issued for Trial Implementation through May 2010.

Comments and change proposals arising from Trial Implementation may be submitted to http://forums.rsna.org under the forum:

"Integrating the Healthcare Enterprise"

Select the sub-forum:

"IHE IT Infrastructure 2009-2010 Supplements for Trial Implementation"

The IHE IT Infrastructure Technical Committee will address these comments resulting from implementation, Connectathon testing, and demonstrations. Final text is expected to be published in August 2010, dependent upon results of IHE validation process.

1 Introduction

This supplement adds one integration profile for transmitting referral requests across organizational boundaries and specifies the documents describing a referral request. This may be extended by additional options or content profiles with further document specifications for particular referral purposes.

The transaction profile corresponds to a "shared documents" use case:

- It describes the folder and document requirements for the documentation that supports a referral request. It specifies the use of a referral document that is specified in detail in the PCC XDS-MS profile.
- The descriptive documents are transferred using the XD* (XDS, XDM, XDR) mechanisms. This profile has mandatory support for a paper printout based referral mechanism, where the paper referral can be used to convey referral information. It has an optional network referral request where the referral information is sent directly between the referral requestor and the performing provider.

There were other use cases identified during the proposal phase for these profiles. These other use cases were deferred until later years.

The management of subsequent questions, clinical discussions, and return of referral results may be covered in other profiles. It is also expected that a substantial percentage (perhaps 30%) of orders must be diverted into manual management. The referral request still reduces the early administrative burden even for cases that then require manual management. The referral request supports automation of the early routine data entry tasks, and subsequent deferral to human decision making.

Add the following to Section 3 Profile Abstract:

- The Document-based Referral Request, where the descriptive documents are transferred using the XDS mechanisms, either network or media. This profile has a mandatory support for a paper printout based referral mechanism, where the paper referral can be used to convey referral information. It has an optional network referral request where the referral information is sent directly between the referral requestor and the performing provider.

1.1 Open Issues

1. The use of XDSFolder.codelist to manage the kind of folder (referral request, referral response, etc.) has not yet been determined.

Volume I – Integration Profiles

This section describes the changes required in Volume I of the Technical Framework that result form including this Integration Profile.

History of Annual Changes

Add the following bullet to the end of the bullet list in Section 1.7

- Added the Document-based Referral Request Integration Profile, for referral requests that are transferred by document sharing (e.g., XDS, XDR, XDM).

Add the following section to Table 2-1 Integration Profiles Dependencies in Section 2.1

Document-Based Referral Request (DRR)	ATNA	The Referral Requestor and Referral Dispatcher actors shall be grouped with a Secure Node or Secure Application if the Request Referral option is supported.	The referral request message is protected against masquerade or modification by ATNA.
	XDS-MS	The Referral Requestor shall be grouped with a Content Creator. The Referral Dispatch shall be grouped with a Content Consumer.	The Content Creator and Content Consumer bring in the XDM, XDR, and XDS support. Conformance Claims of the Content Creator and Content Consmer describe media and network transfer mechanisms are supported.

Add the following sections to Section 2.2

2.2.22 Document-based Referral Request Integration Profile (DRR)

In the Document-based Referral Request Integration Profile the referral request is described by documents that are transmitted using XDS, XDR or XDM. The referral request document location can be conveyed either by a printed uniqueID, or optionally by a direct HL7 order message.

Add the following Section be added to Vol 1

22 Document-based Referral Request Integration Profile (DRR)

The Document-based Referral Request can be used when both the referring and performing providers are members of the same XDS Affinity Domain, or when they are able to exchange

documents by means of XDM. The details of the transfer or exchange are covered in the Content Creator and Content Consumer actors of the XDS-MS Profile. These documents are placed in an XDSFolder:

- A referral request description document, as defined in XDS-MS in the PCC Technical Framework (mandatory).
- Additional referral description documents (optional, not specified by this profile)
- Other supporting clinical documents, e.g., lab results, images, patient care records. (optional, not specified by this profile)

The coordination, selection, and scheduling of the request can be performed by two different methods:

1. The patient is provided with a printed document describing the referral and containing the XDSFolder.uniqueID of the XDSFolder that contains the referral description and supporting documents. This paper document may provide other patient oriented information. For example, a colonoscopy referral might also provide a list of the in-network colonoscopy providers in the patient's district. The patient then selects and schedules the consultation and gives the selected provider the XDSFolder.uniqueID. The patient might do this by handing the provider the piece of paper for optical scanning.

   The provider will use the XDSFolder.uniqueID of the folder to locate the XDSFolder containing the referral description documents (by means of XDS Registry queries or extraction from XDR or XDM content), and then retrieve the referral description documents from the appropriate repositories.

   Support for the paper method is mandatory, and the XDSFolder.uniqueID must be in an OCR scan-able font. XDSFolder.uniqueID may also be present in other formats, e.g., bar code format, based on local policies.

2. A direct network connection between the referring physician's computer system and a selected provider's computer system can be used to send an HL7 order message that conveys the XDSFolder.uniqueID of the folder containing the referral description. This enables fully automatic processing of the referral request. Support for the direct network connection is optional.

Note: The management of subsequent questions, clinical discussions, and return of referral results may be covered in other profiles. It is also expected, and implementations should be prepared for, a substantial percentage (perhaps 30%) that must be diverted into manual management.

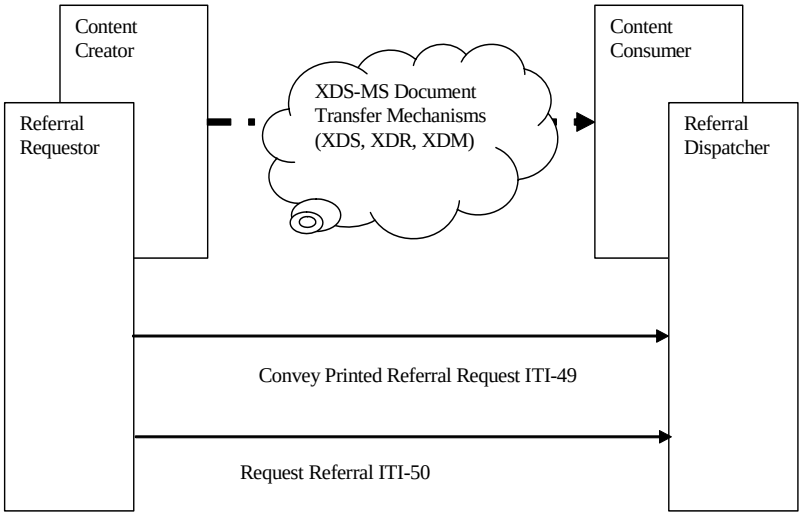


Figure 22-1: Document-based Referral Request Actor Diagram

22.1 Actors/ Transactions

200 The Referral Requestor actor and Request Dispatcher communicate the referral request using either the Request Referral transaction or the Convey Paper Referral Request transaction. The Referral Requestor shall be grouped with an XDS-MS Content Creator actor to manage the transfer of the referral request description documents. The Request Dispatcher shall be grouped with an XDS-MS Content Consumer actor to manage the retrieval of these documents.

205 The Referral Requestor actor conveys the referral request description documents to the Request Dispatcher actor by means of the XDS, XDR, or XDM actors. The request workflow can be managed with either a printed referral request or a network Request Referral transaction.

A Referral Request actor shall support the printed request and may support the optional Request Referral transaction. A Request Dispatcher actor shall support the Convey Printed Referral
210 Request and may support the optional Request Referral transaction.

Table 22.1-2.: Document-based Referral Request Integration Profile (DRR) - Actors and Transactions

Actors	Transactions	Optionality	Section
Referral Requestor	Convey Printed Referral Request [ITI-49]	R	ITI TF-2b: 3.49
	Request Referral [ITI-50]	O	ITI TF-2b: 3.50
Referral Dispatcher	Convey Printed Referral Request [ITI-49]	R	ITI TF-2b: 3.49
	Request Referral [ITI-50]	O	ITI TF-2b: 3.50

22.2 Document-based Referral Request Integration Profile Options

Options that may be selected for this Integration Profile are listed in Table 22.2-1 along with the Actors to which they apply.

Table 22.2-1: DRR - Actors and Options

Actor	Options	Vol & Section
Referral Requestor	Request Referral Option	ITI TF-2b: 3.50
Referral Dispatcher	Request Referral Option	ITI TF-2b: 3.50

22.3 Document-based Referral Use Cases

22.3.1 Email Transfer

Doctor Smith has examined patient Jones regarding a persistent joint pain. He decides that he needs the opinion of a local expert, Dr. Paul. Dr. Smith has eliminated the obvious diagnoses and knows that Dr. Paul is the local expert on this kind of problem. He confirms that Mr. Jones will be able to visit Dr. Paul and explains to Mr. Jones why it needs to be this particular doctor.

Dr. Smith initiates the referral by sending a referral request to Dr. Paul's clinic. Dr. Paul is at a clinic that has only email access. So Dr. Smith packages the relevant documents describing the referral and Mr. Jones' history into an XDM package and sends it as a ZIP file via email using XDM to Dr. Paul's clinic. The referral request is an out of band telephone call to Dr. Paul indicating that the referral details will be arriving by email. Dr. Paul's file clerk Mr. Levi receives the email, unpacks the XDM content, and prepares the records for Dr. Paul.

Mr. Jones makes the scheduling arrangements with Dr. Paul's clinic with Mr. Levi (who handles all the clinic administration). Mr. Levi checks that there is a pending referral request and schedules the visit. Mr. Levi checks the supporting documents that came in the XDM package with the referral request. If there is missing information, he makes further requests of Dr.

Smith's file clerk so that the XDM package with the additional information should arrive before Mr. Jones. Mr. Jones visits for the consultation.

22.3.2 Shared Document Exchange

Doctor Smith has examined patient Jones and it is time for a colonoscopy. There are five in-network clinics and doctors that offer colonoscopies. This is not a time critical examination, and Dr. Smith has no specific recommendation of a particular clinic or doctor that should perform this work.

Dr. Smith initiates the referral having his clerk, Mr. Ali; give Mr. Jones a paper referral document. This is a piece of paper with the list of available clinics and doctors, plus a unique ID for the referral request. Mr. Ali also makes the referral description and relevant patient history information available through XDS by publishing the referral request description and supporting documentation. The referral request XDSFolder.uniqueID can be used for registry queries to find this information.

Mr. Jones checks the scheduling arrangements with the different clinics and picks Dr. Yamato. He gives Mr. Wu, Dr. Yamato's clerk, the paper slip with the XDSFolder.uniqueID. Mr. Wu confirms that the XDS system has the necessary documents for this ID that administrative requirements have been met, and schedules the appointment. Later, before the appointment, Mr. Wu prepares the case for Dr. Yamato.

If the referral information is not sufficiently complete, or more discussion is needed, Mr Wu and Dr Yamato discuss this case with Dr Smith and obtain more information. The original request information provides demographics and other administrative information so that this conversation can focus on the clinical issues.

22.3.2.1 Process Flow

The process for making a Document-based Referral Request is:

1. The Referral Requestor Actor creates the referral request description document and identifies the supporting documents. It is grouped with an XDS-MS Content Creator Actor. The Referral Requestor creates a unique XDSFolder for the referral request, and associates the documents for the request with that folder. The referral request description document and supporting documents shall be placed in this XDSFolder, either directly or by reference.
2. The Referral Requestor Actor prints the human readable referral request information, including the XDSFolder.uniqueID of the folder that has been created. This paper can be conveyed to the Referral Dispatcher actor. It imports the XDSFolder.uniqueID of the folder, which it finds on the referral request printed information.
3. Alternatively, the Referral Request Actor that supports the Request Referral Option may communicate directly with a Referral Dispatcher that supports the Request Referral Option.
4. The Referral Dispatcher actor is grouped with an XDS-MS Content Consumer. It retrieves the folder contents for the Referral Dispatcher.

5. The Referral Dispatcher examines the referral description documents and determines how to process this request.

Note: The management of subsequent questions, clinical discussions, and return of referral results may be covered in other profiles. It is also expected and implementations should be prepared for a substantial percentage (perhaps 30%) that must be diverted into manual management.

22.4 Document-based Referral Request Security Considerations

The risk analysis indicates that:

- There are no significant changes to the risks, threats, or mitigations as a result of the inclusion of referral information as part of the patient information in XDS. The mitigations inherent in the Content Creator, Content Consumer, and their associated XD* Actors are sufficient.
- The printed referral form introduces the minor added risk that the XDSFolder.uniqueID of the referral information may be exposed, but without access through a Content Consumer and its associated XD* actors the XDSFolder.uniqueID information is not useful. Patient protection of the printed referral request is sufficient to mitigate this minor added risk.
- The Request Referral transaction does convey private information over a network connection. This added risk is mitigated by requiring grouping with a Secure Node or Secure Application if the Request Referral Option is supported so that this transaction is properly secured.

<Appendix A> Actor Summary Definitions

Referral Requestor This actor generates the request for consultations.

Referral Dispatcher This actor processes requests for consultation, and determines whether they can be accepted, declined, or deferred for human decision making.

<Appendix B> Transaction Summary Definitions

Request Referral This transaction conveys the request of a referral. The request includes references to the documents that describe the referral request.

Convey Printed Referral Request-This transaction is the printing of the referral request on the sending side, and is the import of the resulting printed referral request on the receiving side. The mechanisms of the transport of the printout are not specified. It is expected to be patient carried.

Volume 2b - Transactions

Add Sections 3.49 and 3,.50

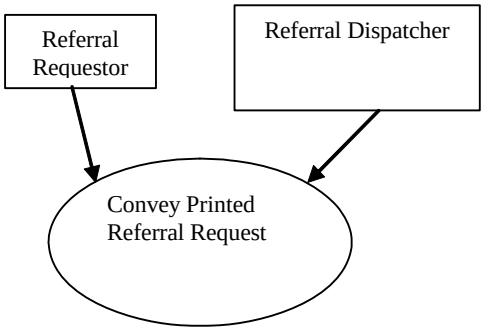
3.49 Convey Printed Referral Request

This section corresponds to Transaction ITI-49 of the IHE Technical Framework. Transaction ITI-49 is used by the Referral Requestor and Referral Dispatcher actors.

3.49.1 Scope

This transaction is used by the Referral Requestor to request a consultation with the Referral Dispatcher. The Referral Requestor creates a piece of paper, the patient conveys that piece of paper, and the Referral Dispatcher imports the information from that piece of paper.

3.49.2 Use Case Roles



Actor: Referral Requestor

Role: Requests consultations.

Actor: Referral Dispatcher

Role: Receives and processes requests. Processing may result in refusal, acceptance, or dispatching for human decision.

3.49.3 Referenced Standards

ANSI INCITS 17-1981 (R2002) Character Set for Optical Character Recognition (OCR-A)

ISO 1073-1:1976 Alphanumeric character sets for optical recognition -- Part 1: Character set OCR-A -- Shapes and dimensions of the printed image

3.49.4 Interaction Diagram

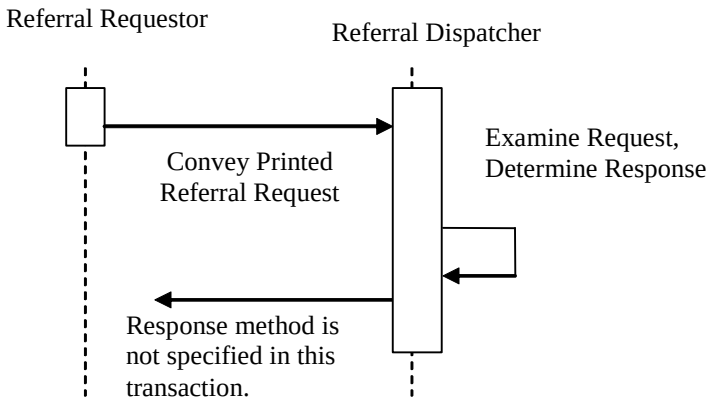


Figure 3.49.4-1: Interaction Diagram

3.49.4.1 Trigger Events

The transaction is triggered by the decision to refer a patient to another provider.

The Referral Requestor shall create an XDSFolder where:

1. The XDSFolder is used for only this one referral request. It shall only contain documents relating to this one referral request.
2. There shall be a referral request description document in this XDSFolder. The referral request description document shall comply with the IHE PCC requirements for a Referral Summary Specification (PCC TF-2: 5.4.1.3), defined in the IHE PCC XDS-MS Content Profile.

   Note: An application can use the format code for this document (defined in the IHE PCC requirements) to find this document when the XDSFolder contains many documents.
3. There may be other documents that are a members of this XDSFolder. These documents should be relevant in some way to the performance of the referral. There are no other restrictions on these other documents.
4. The Document-based Referral Request DRR Profile places a further restriction if media is used to convey the request. There shall be only one XDS Submission Set on the media when used as part of the DRR profile. This is to reduce errors that could result if one media conveyed multiple referral requests.

3.49.4.2 Message Semantics

The Referral Requestor shall print a paper version of the referral information. This paper version shall have:

- A clearly delineated region that is printed using OCR-A fonts, that contains the XDSFolder.uniqueID of the folder for this referral request.

The Referral Requestor may have the ability to print a bar-code version of the XDSFolder.uniqueID of the folder. The Referral Requestor may print additional explanatory information for the patient. The format of this additional information is not specified by IHE.

3.49.4.3 Expected Actions

The Referral Dispatcher shall have the ability to import the XDSFolder.uniqueID of the folder from the paper referral. The Referral Dispatcher shall use the XDSFolder.uniqueID to find the document locations and retrieve the documents in that folder that describe the referral. The Referral Dispatcher shall determine whether the referral request can be accepted, refused, or deferred for human judgement. The import of the XDSFolder.uniqueID may be by means of OCR, bar-code, or manual input of the XDSFolder.uniqueID from the paper request.

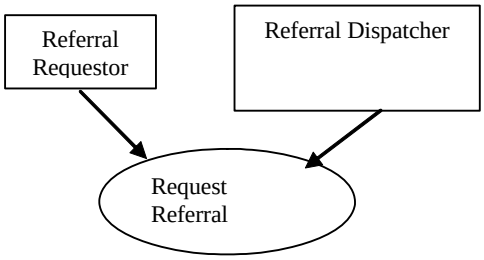
Referral Dispatcher shall process the request. If the XDSFolder is not available, the Referral Dispatcher may choose to wait, or may choose to refuse the order. It is possible that a media delivery may be delayed, or that there is some other reason for a delay. It is also possible that there are resource, scheduling, or other reasons to refuse the order. It is possible that the order needs to be clarified or more information is needed than was provided with the order. When clarification is needed, the decisions may be deferred to a human decision maker.

If Referral Dispatcher refuses the request or defers the decision to a human decision maker, the Referral Requestor shall be notified. This transaction does not specify how that notification is to be performed. The paper referral is used in situations where an electronically integrated order management has not been established. The refusal will probably be conveyed by telephone or paper.

3.50 Request Referral

This section corresponds to Transaction ITI-50 of the IHE Technical Framework. Transaction ITI-50 is used by the Referral Requestor and Referral Dispatcher actors.

3.50.1 Use Case Roles



Actor: Referral Requestor

Role: Requests consultations.

Actor: Referral Dispatcher

Role: Receives and processes requests. Processing may result in refusal, acceptance, or dispatching for human decision.

3.50.2 Referenced Standards

HL7 2.5.1 Chapter 4

3.50.3 Interaction Diagram

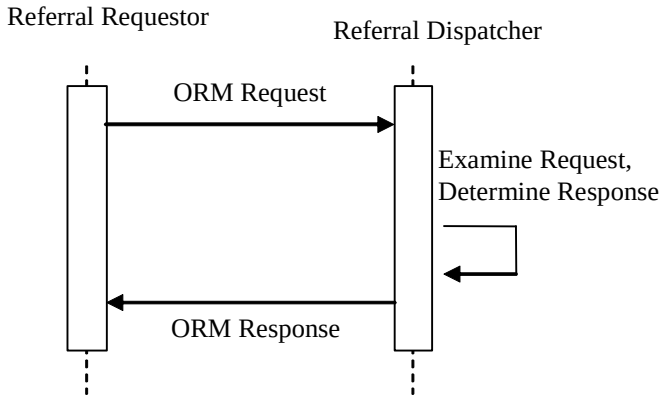


Figure 3.50.3: Interaction Diagram

3.50.4 ORM Request Message

3.50.4.1 Trigger Events

The transaction is triggered by the decision to refer a patient to another provider.

The Document Source grouped with the Referral Requestor shall create an XDSFolder where:

1. The XDSFolder is uniquely used for this one referral request. It shall only contain documents relating to this one referral request.
2. There shall be a referral request description document in this XDSFolder. The referral request description document shall comply with the IHE PCC requirements for a Referral Summary Specification (PCC TF-2: 5.4.1.3), defined in the IHE PCC XDS-MS Content Profile.
3. There may be other documents that are a members of this XDSFolder. These documents should be relevant in some way to the performance of the referral. There are no other restrictions on these other documents.
4. The Document-based Referral Request DRR Profile places a further restriction if XDM media is used to convey the request. There shall be only one XDS Submission Set on the media when used as part of the DRR profile. This is to media to reduce errors that could result if one media conveyed multiple referral requests.

3.50.4.2 Message Semantics

An HL7 ORM messages shall be sent to the Referral Dispatcher. See HL7 2.5.1 Chapter 4 ORM message. Required segments are listed below. Other segments are optional.

Table 3.50.4.2-1. DRR Profile – Reqiored Segments

ORM	General Order Message	Chapter in HL7 2.5.1
MSH	Message Header	2
PID	Patient Identification	3
PV1	Patient Visit	3
ORC	Common Order	4
OBR	Order Detail	4

Each message shall be acknowledged by the HL7 ACK message sent by the receiver of ORM message to its sender.

3.50.4.2.1 MSH Segment

MSH segment shall be constructed as defined in the section 2.4.2 "Message Control" in the HL7 Standard. Field *MSH-9 Message Type* shall have at least two components. The first component shall have a value of "ORM"; the second component shall have value of O01. The third component is optional; however, if present, it shall have a value of ORM_O01.

3.50.4.2.2 PID Segment

All of the fields in PID segment are optional, except those listed in Table 3.50.4.2.2-1.

Table 3.50.4.2.2-1: DRR Profile - PID segment

SEQ	LEN	DT	OPT	TBL#	ITEM#	ELEMENT NAME
3	250	CX	R		00106	Patient Identifier List
5	250	XPN	R		00108	Patient Name

Adapted from the HL7 standard, Version 2.5.1

3.50.4.2.3 PV1 Segment

All of the fields in PV1 segment are optional, except those listed in Table 3.50.4.2.3-1.

Table 3.50.4.2.3-1: DRR profile - PV1 Segment

SEQ	LEN	DT	OPT	TBL#	ITEM#	ELEMENT NAME
2	1	IS	R	0004	00132	Patient Class
8	250	XCN	R2	0010	00138	Referring Doctor

Adapted from the HL7 standard, Version 2.5.1

3.50.4.2.4 ORC Segment

ORC segment conveys common order information, Table 3.50.4.2.4-1

Table 3.50.4.2.4-1: DRR Profile - ORC Segment

SEQ	LEN	DT	OPT	TBL#	ITEM #	ELEMENT NAME
1	2	ID	R	0119	00215	Order Control
2	22	EI	R		00216	Placer Order Number
3	22	EI	O		00217	Filler Order Number
4	22	EI	O		00218	Placer Group Number
5	2	ID	O	0038	00219	Order Status
6	1	ID	O	0121	00220	Response Flag
7	200	TQ	R		00221	Quantity/Timing
8	200	EIP	O		00222	Parent
9	26	TS	R		00223	Date/Time of Transaction
10	250	XCN	R2		00224	Entered By
11	250	XCN	O		00225	Verified By
12	250	XCN	R		00226	Ordering Provider

SEQ	LEN	DT	OPT	TBL#	ITEM #	ELEMENT NAME
13	80	PL	O		00227	Enterer's Location
14	250	XTN	R2		00228	Call Back Phone Number
15	26	TS	O		00229	Order Effective Date/Time
16	250	CE	O		00230	Order Control Code Reason
17	250	CE	R		00231	Entering Organization
18	250	CE	O		00232	Entering Device
19	250	XCN	O		00233	Action By

Adapted from the HL7 Standard, Version 2.5.1

Field *ORC-3 Filler Order Number* shall not be present.

Field *ORC-4 Placer Group Number* shall not be present.

The action to be performed in the ORM message is defined by the Order Control code passed as part of the message. HL7 defines a number of Order Control codes. The order control codes in Table 3.50.4.2.4-2 shall be supported.

Table 3.50.4.2.4-2: DRR Supported Order Control Codes

Value	Description
NW [R]	New order

Adapted from the HL7 Standard, Version 2.5.1

[R]=Required; [O]=Optional

Note: The use of Required/Optional superscripts in the Value column is an IHE extension and is not part of the HL7 Standard.

3.50.4.2.5 OBR Segment

Table 3.50.4.2.5-1: DRR Profile - OBR Segment

SEQ	LEN	DT	OPT	TBL#	ITEM #	ELEMENT NAME
1	4	SI	O		00237	Set ID - OBR
2	75	EI	R		00216	Placer Order Number
3	75	EI	O		00217	Filler Order Number
4	250	CE	R		00238	Universal Service ID
5	2	ID	O		00239	Priority
6	26	TS	O		00240	Requested Date/time
7	26	TS	O		00241	Observation Date/Time
8	26	TS	O		00242	Observation End Date/Time
9	20	CQ	O		00243	Collection Volume
10	250	XCN	O		00244	Collector Identifier
11	1	ID	O	0065	00245	Specimen Action Code
12	250	CE	R2		00246	Danger Code

SEQ	LEN	DT	OPT	TBL#	ITEM #	ELEMENT NAME
13	300	ST	C		00247	Relevant Clinical Info.
14	26	TS	O		00248	Specimen Received Date/Time
15	300	SPS	C	0070	00249	Specimen Source
16	250	XCN	R		00226	Ordering Provider
17	250	XTN	O		00250	Order Callback Phone Number
18	250	ST	R		00251	Placer field 1 (XDSFolder.uniqueID ID for folder)
19	60	ST	O		00252	Placer field 2
20	60	ST	O		00253	Filler Field 1
21	60	ST	O		00254	Filler Field 2
22	26	TS	O		00255	Results Rpt/Status Chng - Date/Time
23	40	MOC	O		00256	Charge to Practice
24	10	ID	O	0074	00257	Diagnostic Serv Sect ID
25	1	ID	O	0123	00258	Result Status
26	400	PRL	O		00259	Parent Result
27	200	TQ	R		00221	Quantity/Timing
28	250	XCN	O		00260	Result Copies To
29	250	EIP	C		00261	Parent
30	20	ID	R2	0124	00262	Transportation Mode
31	300	CE	R2		00263	Reason for Study
32	200	NDL	O		00264	Principal Result Interpreter
33	200	NDL	O		00265	Assistant Result Interpreter
34	200	NDL	O		00266	Technician
35	200	NDL	O		00267	Transcriptionist
36	26	TS	O		00268	Scheduled Date/Time
37	4	NM	O		01028	Number of Sample Containers
38	250	CE	O		01029	Transport Logistics of Collected Sample
39	250	CE	O		01030	Collector’s Comment
40	250	CE	O		01031	Transport Arrangement Responsibility
41	30	ID	R2	0224	01032	Transport Arranged
42	1	ID	O	0225	01033	Escort Required
43	250	CE	O		01034	Planned Patient Transport Comment
44	250	CE	O	0088	00393	Procedure Code
45	250	CE	O	0340	01036	Procedure Code Modifier

Adapted from the HL7 Standard, Version 251

Field *OBR-13 Relevant Clinical Info* shall be populated if patient record contains any medical alerts that may be relevant to the order and, in particular, need to be communicated to the technologist.

Field *OBR-18 Placer Field 1* holds the XDSFolder.uniqueID of the XDSFolder that contains the referral request supporting documentation. This field is extended and a length of up to 250 characters shall be supported.

Per the HL7 Standard, IHE recommends that the fields in ORC and OBR segments given Table 3.50.4.2.5-2 contain the same information.

Table 3.50.4.2.5-2: Identical Element Mappings between ORC and OBR Segments

Element Name	ORC Segment Element	OBR Segment Element
Placer Order Number	ORC-2	OBR-2
Filler Order Number	ORC-3	OBR-3
Quantity/Timing	ORC-7	OBR-27
Parent	ORC-8	OBR-29

3.50.4.3 Expected Actions

The Referral Dispatcher shall have the ability to retrieve the documents in the folder with the XDSFolder.uniqueID from the ORM message. These documents describe the referral. The Referral Dispatcher shall determine whether the referral request should be accepted, refused, or deferred for human judgement.

Referral Dispatcher shall process the request. If the XDSFolder is not available, the Referral Dispatcher may choose to wait, or may choose to refuse the order. It is possible that a media delivery may be delayed, or that there is some other reason for delay. It is also possible that there are resource, scheduling, or other reasons to refuse the order. It is possible that the order needs to be clarified or more information is needed than was provided with the order. When clarification is needed, the decisions may be deferred to a human decision maker.

3.50.5 ORM Response Message

3.50.5.1 Trigger Event

The Referral Dispatcher determines how it will respond to the request. This may be significantly delayed in time relative to the receipt of the request, so the messaging is asynchronous. A response message shall be sent when the request is accepted, refused, or another decision is taken. If the response has been deferred for human analysis, an appropriate response shall be generated when the deferral takes place.

3.50.5.2 Message Semantics

The response message shall comply with HL7 2.5.1 Chapter 4 ORM, especially section 4.5.1.1 and HL7 Table 0119 – Order Control Codes for the response semantics. These responses include acceptance, refusal, and other possible actions.

3.50.5.3 Expected Actions

The Referral Dispatcher shall provide the referral for further internal processing if it is accepted or accepted with modifications. The Referral Dispatcher shall notify the Referral Requestor with the response to the referral request (accepted, rejected, deferred, etc.). The Referral Requestor shall manage further internal processing to manage the result of the referral request.

